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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/281,474 03/30/99 RAJOPADHYE

M DM-6958

EXAMINER

HM12/1019

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C/O E. I. DU PONT DE NEMOURS AND CO.  
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JONES, D

ART UNIT

PAPER NUMBER

1619

16

DATE MAILED:

10/19/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trad marks

# Office Action Summary

Application No.

09/281,474

Applicant(s)

RAJOPADHYE ET AL.

Examiner

D. L. Jones

Art Unit

1619

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-51 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-51 are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

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## RESTRICTION

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - (1) Claims 1 and 2, drawn to compounds comprising a chelator, peptide, linking group (optional), targeting moiety, and EGFR, classified in class 424, subclass 1.69.
  - (2) Claims 1 and 2, drawn to compounds comprising a chelator, peptide, linking group (optional), targeting moiety, and FGFR, classified in class 424, subclass 1.69.
  - (3) Claims 1 and 2, drawn to compounds comprising a chelator, peptide, linking group (optional), targeting moiety, and PDGFR, classified in class 424, subclass 1.69.
  - (4) Claims 1 and 2, drawn to compounds comprising a chelator, peptide, linking group (optional), targeting moiety, and Flk-1/KDR, classified in class 424, subclass 1.69.
  - (5) Claims 1 and 2, drawn to compounds comprising a chelator, peptide, linking group (optional), targeting moiety, and Flt-1, classified in class 424, subclass 1.69.
  - (6) Claims 1 and 2, drawn to compounds comprising a chelator, peptide, linking group (optional), targeting moiety, and Tek, classified in class 424, subclass 1.69.

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- (7) Claims 1 and 2, drawn to compounds comprising a chelator, peptide, linking group (optional), targeting moiety, and Tie, classified in class 424, subclass 1.69.
- (8) Claims 1 and 2, drawn to compounds comprising a chelator, peptide, linking group (optional), targeting moiety, and neuropilin-1, classified in class 424, subclass 1.69.
- (9) Claims 1 and 2, drawn to compounds comprising a chelator, peptide, linking group (optional), targeting moiety, and endogolin, classified in class 424, subclass 1.69.
- (10) Claims 1 and 2, drawn to compounds comprising a chelator, peptide, linking group (optional), targeting moiety, and endosialin, classified in class 424, subclass 1.69.
- (11) Claims 1 and 2, drawn to compounds comprising a chelator, peptide, linking group (optional), targeting moiety, and Ax1, classified in class 424, subclass 1.69.
- (12) Claims 1-10, drawn to compounds comprising a chelator, peptide, linking group (optional), targeting moiety, and  $\alpha v \beta 3$ , classified in class 424, subclass 1.69.
- (13) Claims 1 and 2, drawn to compounds comprising a chelator, peptide, linking group (optional), targeting moiety, and  $\alpha v \beta 5$ , classified in class 424, subclass 1.69.

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- (14) Claims 1 and 2, drawn to compounds comprising a chelator, peptide, linking group (optional), targeting moiety, and  $\alpha 5\beta 1$ , classified in class 424, subclass 1.69.
- (15) Claims 1 and 2, drawn to compounds comprising a chelator, peptide, linking group (optional), targeting moiety, and  $\alpha 4\beta 1$ , classified in class 424, subclass 1.69.
- (16) Claims 1 and 2, drawn to compounds comprising a chelator, peptide, linking group (optional), targeting moiety, and  $\alpha 1\beta 1$ , classified in class 424, subclass 1.69.
- (17) Claims 1 and 2, drawn to compounds comprising a chelator, peptide, linking group (optional), targeting moiety, and  $\alpha 2\beta 2$ , classified in class 424, subclass 1.69.
- (18) Claims 11, 12, 34, 35, and 49, drawn to metallopharmaceuticals and uses thereof comprising a chelator, peptide, linking group (optional), targeting moiety, diagnostic metal, and EGFR, classified in class 534, subclass 7.
- (19) Claims 11, 12, 34, 35, and 49, drawn to metallopharmaceuticals and uses thereof comprising a chelator, peptide, linking group (optional), targeting moiety, diagnostic metal, and FGFR, classified in class 534, subclass 7.
- (20) Claims 11, 12, 34, 35, and 49, drawn to metallopharmaceuticals and uses thereof comprising a chelator, peptide, linking group (optional), targeting moiety, diagnostic metal, and PDGFR, classified in class 534, subclass 7.

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- (21) Claims 11, 12, 34, 35, and 49, drawn to metallopharmaceuticals and use thereof comprising a chelator, peptide, linking group (optional), targeting moiety, diagnostic metal, and Flk-1/KDR, classified in class 534, subclass 7.
- (22) Claims 11, 12, 34, 35, and 49, drawn to metallopharmaceuticals and uses thereof comprising a chelator, peptide, linking group (optional), targeting moiety, diagnostic metal, and Flt-1, classified in class 534, subclass 7.
- (23) Claims 11, 12, 34, 35, and 49, drawn to metallopharmaceuticals and uses thereof comprising a chelator, peptide, linking group (optional), targeting moiety, diagnostic metal, and Tek, classified in class 534, subclass 7.
- (24) Claims 11, 12, 34, 35, and 49, drawn to metallopharmaceuticals and uses thereof comprising a chelator, peptide, linking group (optional), targeting moiety, diagnostic metal, and Tie, classified in class 534, subclass 7.
- (25) Claims 11, 12, 34, 35, and 49, drawn to metallopharmaceuticals and uses thereof comprising a chelator, peptide, linking group (optional), targeting moiety, diagnostic metal, and neuropilin-1, classified in class 534, subclass 7.
- (26) Claims 11, 12, 34, 35, and 49, drawn to metallopharmaceuticals and uses thereof comprising a chelator, peptide, linking group (optional), targeting moiety, diagnostic metal, and endogolin, classified in class 534, subclass 7.

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- (27) Claims 11, 12, 34, 35, and 49, drawn to metallopharmaceuticals and uses thereof comprising a chelator, peptide, linking group (optional), targeting moiety, diagnostic metal, and endosialin, classified in class 534, subclass 7.
- (28) Claims 11, 12, 34, 35, and 49, drawn to metallopharmaceuticals and uses thereof comprising a chelator, peptide, linking group (optional), targeting moiety, diagnostic metal, and Ax1, classified in class 534, subclass 7.
- (29) Claims 11-18, 34, 35, and 49, drawn to metallopharmaceuticals and uses thereof comprising a chelator, peptide, linking group (optional), targeting moiety, diagnostic metal, and  $\alpha v \beta 3$ , classified in class 534, subclass 7.
- (30) Claims 11, 12, 34, 35, and 49, drawn to metallopharmaceuticals and uses thereof comprising a chelator, peptide, linking group (optional), targeting moiety, diagnostic metal, and  $\alpha v \beta 5$ , classified in class 534, subclass 7.
- (31) Claims 11, 12, 34, 35, and 49, drawn to metallopharmaceuticals comprising a chelator, peptide, linking group (optional), targeting moiety, diagnostic metal, and  $\alpha 5 \beta 1$ , classified in class 534, subclass 7.
- (32) Claims 11, 12, 34, 35, and 49, drawn to metallopharmaceuticals and uses thereof comprising a chelator, peptide, linking group (optional), targeting moiety, diagnostic metal, and  $\alpha 4 \beta 1$ , classified in class 534, subclass 7.
- (33) Claims 11, 12, 34, 35, and 49, drawn to metallopharmaceuticals and uses thereof comprising a chelator, peptide, linking group (optional), targeting moiety, diagnostic metal, and  $\alpha 1 \beta 1$ , classified in class 534, subclass 7.

- (34) Claims 11, 12, 34, 35, and 49, drawn to metallopharmaceuticals and uses thereof comprising a chelator, peptide, linking group (optional), targeting moiety, diagnostic metal, and  $\alpha 2\beta 2$ , classified in class 534, subclass 7.
- (35) Claims 11, 19, 27, 32, 33, and 48, drawn to metallopharmaceuticals and uses thereof comprising a chelator, peptide, linking group (optional), targeting moiety, therapeutic metal, and EGFR, classified in class 534, subclass 7.
- (36) Claims 11, 19, 27, 32, 33, and 48, drawn to metallopharmaceuticals and uses thereof comprising a chelator, peptide, linking group (optional), targeting moiety, therapeutic metal, and FGFR, classified in class 534, subclass 7.
- (37) Claims 11, 19, 27, 32, 33, and 48, drawn to metallopharmaceuticals and uses thereof comprising a chelator, peptide, linking group (optional), targeting moiety, therapeutic metal, and PDGFR, classified in class 534, subclass 7.
- (38) Claims 11, 19, 27, 32, 33, and 48, drawn to metallopharmaceuticals and use thereof comprising a chelator, peptide, linking group (optional), targeting moiety, therapeutic metal, and Flk-1/KDR, classified in class 534, subclass 7.
- (39) Claims 11, 19, 27, 32, 33, and 48, drawn to metallopharmaceuticals and uses thereof comprising a chelator, peptide, linking group (optional),



targeting moiety, therapeutic metal, and Flt-1, classified in class 534, subclass 7.

- (40) Claims 11, 19, 27, 32, 33, and 48, drawn to metallopharmaceuticals and uses thereof comprising a chelator, peptide, linking group (optional), targeting moiety, therapeutic metal, and Tek, classified in class 534, subclass 7.
- (41) Claims 11, 19, 27, 32, 33, and 48, drawn to metallopharmaceuticals and uses thereof comprising a chelator, peptide, linking group (optional), targeting moiety, therapeutic metal, and Tie, classified in class 534, subclass 7.
- (42) Claims 11, 19, 27, 32, 33, and 48, drawn to metallopharmaceuticals and uses thereof comprising a chelator, peptide, linking group (optional), targeting moiety, therapeutic metal, and neuropilin-1, classified in class 534, subclass 7.
- (43) Claims 11, 19, 27, 32, 33, and 48, drawn to metallopharmaceuticals and uses thereof comprising a chelator, peptide, linking group (optional), targeting moiety, therapeutic metal, and endogolin, classified in class 534, subclass 7.
- (44) Claims 11, 19, 27, 32, 33, and 48, drawn to metallopharmaceuticals and uses thereof comprising a chelator, peptide, linking group (optional), targeting moiety, therapeutic metal, and endosialin, classified in class 534, subclass 7.

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- (45) Claims 11, 19, 27, 32, 33, and 48, drawn to metallopharmaceuticals and uses thereof comprising a chelator, peptide, linking group (optional), targeting moiety, therapeutic metal, and Ax1, classified in class 534, subclass 7.
- (46) Claims 11, 19-33, and 48, drawn to metallopharmaceuticals and uses thereof comprising a chelator, peptide, linking group (optional), targeting moiety, therapeutic metal, and  $\alpha v \beta 3$ , classified in class 534, subclass 7.
- (47) Claims 11, 19, 27, 32, 33, and 48, drawn to metallopharmaceuticals and uses thereof comprising a chelator, peptide, linking group (optional), targeting moiety, therapeutic metal, and  $\alpha v \beta 5$ , classified in class 534, subclass 7.
- (48) Claims 11, 19, 27, 32, 33, and 48, drawn to metallopharmaceuticals comprising a chelator, peptide, linking group (optional), targeting moiety, therapeutic metal, and  $\alpha 5 \beta 1$ , classified in class 534, subclass 7.
- (49) Claims 11, 19, 27, 32, 33, and 48, drawn to metallopharmaceuticals and uses thereof comprising a chelator, peptide, linking group (optional), targeting moiety, therapeutic metal, and  $\alpha 4 \beta 1$ , classified in class 534, subclass 7.
- (50) Claims 11, 19, 27, 32, 33, and 48, drawn to metallopharmaceuticals and uses thereof comprising a chelator, peptide, linking group (optional), targeting moiety, therapeutic metal, and  $\alpha 1 \beta 1$ , classified in class 534, subclass 7.

- (51) Claims 11, 19, 27, 32, 33, and 48, drawn to metallopharmaceuticals and uses thereof comprising a chelator, peptide, linking group (optional), targeting moiety, therapeutic metal, and  $\alpha 2\beta 2$ , classified in class 534, subclass 7.
- (52) Claims 38 and 39, drawn to compounds comprising a surfactant, peptide, linking group (optional), targeting moiety, and EGFR, classified in class 516, subclass 22.
- (53) Claims 38 and 39, drawn to compounds comprising a surfactant, peptide, linking group (optional), targeting moiety, and FGFR, classified in class 516, subclass 22.
- (54) Claims 38 and 39, drawn to compounds comprising a surfactant, peptide, linking group (optional), targeting moiety, and PDGFR, classified in class 516, subclass 22.
- (55) Claims 38 and 39, drawn to compounds comprising a surfactant, peptide, linking group (optional), targeting moiety, and Flk-1/KDR, classified in class 516, subclass 22.
- (56) Claims 38 and 39, drawn to compounds comprising a surfactant, peptide, linking group (optional), targeting moiety, and Flt-1, classified in class 516, subclass 22.
- (57) Claims 38 and 39, drawn to compounds comprising a surfactant, peptide, linking group (optional), targeting moiety, and Tek, classified in class 516, subclass 22.

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- (58) Claims 38 and 39, drawn to compounds comprising a surfactant, peptide, linking group (optional), targeting moiety, and Tie, classified in class 516, subclass 22.
- (59) Claims 38 and 39, drawn to compounds comprising a surfactant, peptide, linking group (optional), targeting moiety, and neuropilin-1, classified in class 516, subclass 22.
- (60) Claims 38 and 39, drawn to compounds comprising a surfactant, peptide, linking group (optional), targeting moiety, and endogolin, classified in class 516, subclass 22.
- (61) Claims 38 and 39, drawn to compounds comprising a surfactant, peptide, linking group (optional), targeting moiety, and endosialin, classified in class 516, subclass 22.
- (62) Claims 38 and 39, drawn to compounds comprising a surfactant, peptide, linking group (optional), targeting moiety, and Ax1, classified in class 516, subclass 22.
- (63) Claims 38-43, 46, and 47, drawn to compounds comprising a surfactant, peptide, linking group (optional), targeting moiety, and  $\alpha v \beta 3$ , classified in class 516, subclass 22.
- (64) Claims 38 and 39, drawn to compounds comprising a surfactant, peptide, linking group (optional), targeting moiety, and  $\alpha v \beta 5$ , classified in class 516, subclass 22.

- (65) Claims 38 and 39, drawn to compounds comprising a surfactant, peptide, linking group (optional), targeting moiety, and  $\alpha 5\beta 1$ , classified in class 516, subclass 22.
- (66) Claims 38 and 39, drawn to compounds comprising a surfactant, peptide, linking group (optional), targeting moiety, and  $\alpha 4\beta 1$ , classified in class 516, subclass 22.
- (67) Claims 38 and 39, drawn to compounds comprising a surfactant, peptide, linking group (optional), targeting moiety, and  $\alpha 1\beta 1$ , classified in class 516, subclass 22.
- (68) Claims 38 and 39, drawn to compounds comprising a surfactant, peptide, linking group (optional), targeting moiety, and  $\alpha 2\beta 2$ , classified in class 516, subclass 22.
- (67) Claims 44 and 45, drawn to an ultrasound contrast agent comprising 1,2-dipalmitoyl-sn-glycero-3-phosphatidic acid, 1,2-dipalmitoyl-sn-glycero-3-phosphatidylcholine, or N-(methoxypolyethylene glycol 5000 carbamoyl)-1,2-dipalmitoyl-sn-glycero-3-phosphatidylethanolamine, classified in class 424, subclass 9.5.
- (68) Claims 1-3, 5, and 50, drawn to a therapeutic radiopharmaceutical composition comprising a radiolabeled targeting moiety, peptide, chelator, receptor, and a therapeutic metal, classified in class 534, subclass 7.

**Note:** Claims appearing in more than one group will be examined only to the extent that they read upon the elected group.

2. Inventions (1) – (70) are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions. In part, the claims are drawn to numerous patentably distinct groups comprising peptides, surfactants, receptors, and/or targeting moieties. Although the classifications for some of the groups overlap, each represents a patentably distinct product with distinct physical and functional characteristics. Furthermore, the searching for more than one product would be burdensome because each group requires a separate 'word search' of the various databases. Also, as indicated above, the classification and search of the compounds/compositions is dependent upon components present and utility.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

#### **ELECTION OF SPECIES**

4. Claims 1-51 are generic to a plurality of disclosed patentably distinct species comprising, for example, (1) the compounds and method of use of the compounds of Group I as set forth in independent claim 1; (2) the compositions and method of use of the compositions of Group II as set forth in independent claim 11; (3) the complexes of independent claim 38; and (4) the agents of independent claims 44 and 45.

Furthermore, a burdensome search would be necessary because of the numerous variables and substituents present in the invention. In particular, the targeting moiety may be a peptide or peptide mimetic selected from EGFR, FGFR, PDGFR, Flk-1/KDR, Flt-1, Tek, Tie, neuropilin-1, endoglin, endosialin, and Ax1 to name a few. The variable Q may be a peptide independently selected from the group defined in claim 3 having variables L, M, K, R1, R2, R3, R4, R5, K', and/or M' or those set forth in claim 6. The chelator, Ch, may be selected from those in claim 3 (see pages 178-179) containing the variables A1-A8 and E.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species, even though this requirement is traversed.

Notes: (A) *The Examiner respectfully requests that the Applicant assign each variable the appropriate value when electing a species (i.e., X = hydrogen; Z = nitrogen; Y = -CH<sub>3</sub>; etc.); and*

(B) The election of species has to be within the elected group as set forth above.

5. Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

6. Upon the election of a single disclosed species (e.g., the first species of claim 17), a generic concept inclusive of the elected species will be identified by the Examiner for examination along with the elected species. Moreover, whatever, specific complex is ultimately elected, Applicant's are required to list all claims readable thereon.

7. A telephone call was not made to request an oral election to the restriction requirement due to the complexity of the species and restriction above.

8. Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

9. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).


10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to D. L. Jones whose telephone number is (703) 308-4640. The examiner can normally be reached on Mon.-Fri. (alternate Mon.), 6:45 a.m. - 4:15 p.m..



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diana Dudash can be reached on (703) 308- 2328. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-4556 for regular communications and (703) 308-4556 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1235.



D. L. Jones  
Primary Examiner  
Art Unit 1619

October 17, 2001